

LESSON 2: EARLY CHILDHOOD CARIES

Purpose: To gain a basic understanding of the factors that impact the development and consequences of dental decay in early childhood.

Overview: The trainee will gain an understanding of early childhood caries (ECC), its causes and influencing factors.

Goals: The trainee will be able to describe the following:

- The oral disease called “Early Childhood Caries” (ECC) and its impact on general health and well-being.
- Feeding behaviors that influence the development of ECC.

Activities: Assessing a client’s ECC susceptibility. The trainer uses the following case studies with different levels of risk factors for discussion. If you choose to do this as a group activity, groups should report their findings to the entire class.

1. A 15-year old is pregnant for the first time and has several visible cavities in her teeth. She refuses to go to the dentist because she is afraid.
2. A 35-year old pregnant woman has four other young children and she tells you she really doesn’t have time to brush her teeth in the morning, let alone floss or even comb her hair!
3. Father puts the bottle in bed with the baby at night when mother works. This saves time and the baby rarely cries this way.

Possible correct responses:

1. The young woman obviously needs to visit a dentist. Listen for a while to understand WHY the young woman is so afraid of the dentist. If the problem originated a long time ago, emphasize how far dentistry has come in the past 10 years. Most dental work, while sometimes uncomfortable, does not hurt. Identify someone who can go with her to the dentist to comfort her. Most any positive idea is probably acceptable.
2. This woman could use some support. Let her know that it sounds like she’s doing a great job. This mother might benefit from understanding the importance of keeping her teeth and gums clean. If she can find just a few minutes for herself each day, she might feel better about herself; it doesn’t necessarily need to be in the morning. Let the woman come up with her own plan so she will be more likely to follow through. Point out that finding a few minutes for herself each day might even improve overall parenting.



3. Talk to the father. He may not even know how harmful this habit can be. He may also need suggestions for a new bedtime routine that includes holding the baby while feeding. If this is impossible, then the mother will have to be educated and motivated to discuss this with the father herself. There are many varied approaches to this.

Key Terms:

Early Childhood Caries
Baby Bottle Tooth Decay
Permanent Teeth
Primary Teeth
Risk Behavior



EARLY CHILDHOOD CARIES

❖ What is Early Childhood Caries (ECC)?

- Early Childhood Caries (ECC) is the development of often severe tooth decay in infants and young children.
- Excessive use of a baby bottle or cup with juice, milk, formula or another drink containing sugars may cause sugary fluids to pool in the mouth, and create an environment in the mouth that encourages bacteria to multiply and produce the acids that eat away at tooth enamel.
- Most cases of ECC are preventable. Early detection is necessary to prevent or stop the progression of this disease.

[Note: More on prevention in Lesson 4.](#)

❖ What does ECC look like?

ECC is not simply any dental decay appearing in early childhood. The clinical appearance of ECC does not follow the typical pattern of dental decay. Instead, it most often affects the pits and fissures of the chewing surfaces of teeth. ECC presents with specific defining characteristics:

- ECC is a rapidly developing type of decay that characteristically affects the **4 upper front teeth** – although molars may also be affected.
- The upper front teeth come into the mouth between 6 and 9 months of age. ECC is found, therefore, in very young children – between **6 months to 2 years** of age.
- The decay typically (but not necessarily) starts as a dull **white** band on the smooth surface of the tooth at the gum line, followed by yellow discoloration. Ideally, this is the time for the dentist to begin treatment intervention.



- As the condition advances, a soft **brown** or black collar surrounds the tooth, progressing slowly toward the chewing surface of the tooth until only a small amount of enamel-covered tooth remains.



- Eventually, the tooth breaks off, leaving only a **decayed stump** where a healthy tooth once was.
- It is important to realize that the patterns described above may be the most typical, but different conditions may reveal different clinical patterns. In any case, decay in the teeth of very young children should raise a red flag.

❖ **Why was ECC once known as Baby Bottle Tooth Decay (BBTD)?**

ECC has been linked to certain feeding habits such as overuse of a bottle by infants. In 1962, a Connecticut dentist, Dr. Elias Fass, first described a specific pattern of dental decay found in infants and young children. He termed this condition “nursing bottle mouth” based on the observation that children with this pattern of decay were often put to bed with a bottle. The specific pattern of decay has been labeled in many ways since then. The most common name is **Baby Bottle Tooth Decay (BBTD)**.



❖ **Why is BBTD no longer an appropriate name for ECC?**

In addition to frequent use of the bottle, experts now agree that the causes of ECC are more complex, including dietary practices, social, cultural and economic influences, genetic influences, and more. Changing feeding habits and use of the bottle, therefore, are not the only steps necessary to prevent dental decay in infants and young children. Defining this disease by only one cause minimizes the magnitude, complexity and infectious nature of ECC.

❖ **How does severe ECC impact the child later in life?**

The **primary teeth** (baby teeth) are very important and contribute to a child’s overall development. **Permanent** (adult) **teeth** will eventually replace them, but this does not reduce the importance of primary teeth.

- Dental decay in primary teeth is an infectious process that can be very painful, spread, and affect the development of the adult teeth.
- Dental decay in primary teeth most often means there will be dental decay in the adult teeth.
- Healthy primary teeth are important for:
 - Proper chewing, which helps assure the infant’s proper nutrition
 - Proper speech development
 - Holding the space in the dental arch until the permanent teeth are ready to come into the mouth
 - The development of the facial structure.

Note: See Lesson 1 for more information about the consequences of severe dental decay.



❖ **How widespread is ECC?**

- A 1997 survey of over 5,000 children found that active untreated dental decay was present in:
 - 6 percent of 1 year olds
 - 22 percent of 2 year olds
 - 35 percent of 3 year olds.
- Connecticut surveys indicate that the prevalence of ECC may be as high as 25 percent in high-risk populations. As many as 65 percent of parents and caregivers in these populations use feeding practices that may put their infants at risk for ECC.

❖ **What role does diet and nutrition play in the development of ECC?**

- Food and drink containing carbohydrates are necessary ingredients in the development of ECC (and dental decay, in general). Carbohydrates are sugars and starches found in many foods and are not limited to soda, cookies and cakes.
- Milk, fruits, breads, cereals, grains and some vegetables contain carbohydrates. These foods, however, contain many valuable and necessary nutrients, as well. Processed foods, on the other hand, like soda, candy, cakes and chips, have very high amounts of sugars added to them (“refined” sugars) and have limited or no nutritional value.
- Unfortunately, bacteria do not distinguish between the sugars in nutritious versus non-nutritious foods. These bacteria metabolize either form to create the acid that eats away at the tooth.

For more information about diet, nutrition and decay see Lessons 1, 3 and 4.

❖ **What are the most common risk behaviors associated with ECC?**

The most common **risk behaviors** associated with ECC are frequent snacking and the night-time, nap-time or at-will use of a baby bottle or cup with juice, milk, formula or another drink containing sugars. The sugary fluids pool in the mouth after the baby falls asleep or all day long, in the case of at-will feeding, creating the environment in the mouth that encourages *S. mutans* to multiply and produce the acids that eat away at tooth enamel. It's not just *what* you eat but *how often*.

Note: For more information about risk behavior for ECC & other forms of dental decay, see Lesson 3.



❖ **What can be done to help prevent ECC?**

- Don't use a bottle to calm or put an infant to bed! Instead of a bottle use:
 - A favorite blanket or toy
 - A clean pacifier
 - Holding, patting, rocking
 - Reading: It is never too soon to read to the baby
 - Softly talking or singing: though they might not understand the words, a familiar voice will be comforting
 - or -
 - Let the baby cry. It is normal, in most situations, for a baby to cry when first put to bed. Generally, after the third night, the baby will drift off to peaceful sleep without crying.
 - The baby may have a sleep disturbance that should be discussed with the pediatrician.
- Switch to a “sippy cup” or other small cup as soon as possible. A child should be encouraged to start using a cup as soon as he or she can sit up unassisted. Parents should be encouraged to transition their child from bottle to cup by 12 months of age. Similarly, the young child should be transitioned to the cup whenever the mother is ready to discontinue breast-feeding.
- If a child must be pacified or put to sleep with a bottle, give a bottle filled with plain water. If a child does not adapt initially to the plain water, it may be necessary to fill the bottle with a mixture of juice and water, reducing the amount of juice slightly each night until it is filled with only water.

